

WHAT IS CLAIMED

SUB A

1. A method of providing digital communications between a first site and a second site remote from said first site comprising the steps of:

- 5 (a) transporting digital communication signals sourced from first digital communication equipment installed at said first site over a first wireline communication link that also conveys electrical power for wireline digital communication equipment coupled thereto;
- 10 (b) providing a first wireless communication device at a third site remote with respect to said first and second sites; and
- 15 (c) coupling said first wireless communication device to said first wireline communication link so as to extract electrical power for operating said first wireless communication device from electrical power conveyed over said first wireline communication link, and enable said digital communication signals to be wirelessly transmitted by said wireless communication
- 20 device for delivery to said second site.

2. The method according to claim 1, further comprising the steps of:

- (d) providing a second wireless communication device at a fourth site remote with respect to said

5 third site;

(e) coupling a second wireline communication link, that conveys electrical power for wireless digital communication equipment coupled thereto and transports digital communication signals thereover, to
10 said second wireless communication device at said fourth site and to digital communication equipment installed at said second site, so as to provide electrical power for operating said second wireless communication device and enable said digital
15 communication signals to be received by said second wireless communication device and forwarded over said second wireline communication link to said digital communication equipment installed at said second site.

SUB A'2

3. The method according to claim 1, wherein said first wireless communication device comprises a digital radio that is operative to interface T1 rate digital telecommunication signals with said first wireline
5 communication link, and to wirelessly transmit and receive RF energy containing said T1 rate digital telecommunication signals.

4. The method according to claim 1, wherein said first wireless communication device includes:
a line interface coupled to said first wireline

communication link, and being operative to extract
5 power therefrom and interface digital telecommunication
signals transported thereover;

a wireless transceiver, coupled to said line
interface and being configured to wirelessly transmit
and receive RF energy containing said digital
10 telecommunication signals; and

a DC-DC voltage converter coupled to said line
interface and being operative to convert power
extracted thereby to voltages necessary to operate said
wireless transceiver.

5. The method according to claim 4, wherein said
digital communication signals comprise T1 digital
communication signals, said line interface includes a
T1 framer, and wherein said wireless transceiver
5 includes a transmitter unit that is configured to
perform modulation and up-conversion to RF of baseband
T1 digital communication signals provided by said T1
framer, and a receiver unit that is configured to
perform RF to baseband down-conversion and demodulation
10 of Rf energy received thereby and containing T1 digital
communication signals for application to said T1
framer.

6. A loop-powered digital radio comprising:

a line interface that is adapted to be coupled to a wireline communication link over which digital communication signals sourced from first digital communication equipment installed at a first site are transported, said wireline communication link also conveying electrical power for operating wireline digital communication equipment coupled thereto, said line interface being operative to extract power from said wireline communication link and interface digital telecommunication signals transported thereover;

a wireless transceiver, coupled to said line interface and being configured to wirelessly transmit and receive RF energy containing said digital telecommunication signals; and

a DC-DC voltage converter coupled to said line interface and being operative to convert power extracted thereby to voltages necessary to operate said wireless transceiver.

7. The loop-powered digital radio according to claim 6, wherein said line interface is adapted to be coupled to said wireline communication link at a second site that is remote from said first site and provides no source of electrical power, exclusive of that conveyed by said wireline link, that is sufficient to operate said radio.

8. The loop-powered digital radio according to claim 6, wherein said digital telecommunication signals comprise T1 rate digital telecommunication signals.

9. The loop-powered digital radio according to claim 8, wherein said line interface includes a T1 framer, and wherein said wireless transceiver includes a transmitter unit that is configured to perform modulation and up-conversion to RF of baseband T1 digital communication signals provided by said T1 framer, and a receiver unit that is configured to perform RF to baseband down-conversion and demodulation of Rf energy received thereby and containing T1 digital communication signals for application to said T1 framer.

Sub A 10. A system for providing digital communications between a first site and a second site remote from said first site comprising:

a first wireline communication link adapted to transport digital communication signals sourced from first digital communication equipment installed at said first site and convey electrical power for wireline digital communication equipment coupled thereto; and a first wireless communication device located at a

10 third site remote with respect to said first and second
sites, and being operative to extract electrical power
for its operation from said first wireline
communication link and to wirelessly transmit said
digital communication signals for delivery to said
15 second site.

11. The system according to claim 10, wherein
said first wireless communication device comprises a
digital radio that is operative to interface T1 rate
digital telecommunication signals with said first
5 wireline communication link, and to wirelessly transmit
and receive RF energy containing said T1 rate digital
telecommunication signals.

12. The system according to claim 10, wherein
said first wireless communication device includes:

a line interface coupled to said first wireline
communication link, and being operative to extract
5 power therefrom and interface digital telecommunication
signals transported thereover;

a wireless transceiver, coupled to said line
interface and being configured to wirelessly transmit
and receive RF energy containing said digital
10 telecommunication signals; and

a DC-DC voltage converter coupled to said line

interface and being operative to convert power extracted thereby to voltages necessary to operate said wireless transceiver.

13. The system according to claim 12, wherein said digital communication signals comprise T1 digital communication signals, said line interface includes a T1 framer, and wherein said wireless transceiver
5 includes a transmitter unit that is configured to perform modulation and up-conversion to RF of baseband T1 digital communication signals provided by said T1 framer, and a receiver unit that is configured to perform RF to baseband down-conversion and demodulation
10 of Rf energy received thereby and containing T1 digital communication signals for application to said T1 framer.

SUP A 14. The system according to claim 10, further comprising

a second wireless communication device at a fourth site remote with respect to said third site; and

5 a second wireline communication link, that conveys electrical power for wireless digital communication equipment coupled thereto and transports digital communication signals thereover, coupled to said second wireless communication device at said fourth site and

10 to digital communication equipment installed at said
second site, so as to provide electrical power for
operating said second wireless communication device and
enable said digital communication signals to be
received by said second wireless communication device
15 and forwarded over said second wireline communication
link to said digital communication equipment installed
at said second site.